

## WHAT IS CLAIMED IS:

1                   1.       A microarray comprising a support having a plurality of discrete  
2 regions having a biopolymer spotted thereon, wherein attached to said biopolymer in each of  
3 said regions is a ligand that can be the same or different from a ligand in any other of said  
4 discrete regions, and wherein the concentration of said ligand in said discrete regions is  
5 substantially normalized.

1                   2.       The microarray of claim 1, wherein said support is selected from the  
2 group consisting of glass, polystyrene, PDVF membranes, nylon membranes, and  
3 polycarbonate slides.

1                   3.       The microarray of claim 1, wherein said biopolymer is a member  
2 selected from the group consisting of oligosaccharides, proteins, polyketides, peptoids,  
3 hydrogels, polylactates and polyurethanes.

1                   4.       The microarray of claim 1, wherein said biopolymer is attached to said  
2 support via noncovalent interactions.

1                   5.       The microarray of claim 4, wherein said noncovalent interactions are  
2 selected from the group consisting of hydrogen bonding, van der Waals interactions,  
3 hydrophobic interactions, hydrophilic interactions and combinations thereof.

1                   6.       The microarray of claim 1, wherein said biopolymer is attached to said  
2 support via covalent interactions.

1                   7.       The microarray of claim 1, wherein said ligand is selected from the  
2 group consisting of amino acids, peptides, proteins, sugars, lipids, nucleic acids, small  
3 organic compounds, pharmaceutical agents, candidate pharmaceutical agents, natural or  
4 synthetic antigens, and combinations thereof.

1                   8.       The microarray of claim 1, wherein said ligand is attached to said  
2 biopolymer via chemoselective ligation.

1                   9.       The microarray of claim 1, wherein said biopolymer is agarose, and  
2 said support is glass.

1                   10.     The microarray of claim 1, wherein said biopolymer is human serum  
2     albumin, and said support is polystyrene.

1                   11.     The microarray of claim 1, wherein the difference in concentration  
2     between any two discrete regions is less than 50%.

1                   12.     The microarray of claim 1, wherein the difference in concentration  
2     between any two discrete regions is less than 20%.

1                   13.     The microarray of claim 1, wherein the difference in concentration  
2     between any two discrete regions is less than 5%.

1                   14.     A method of producing a concentration-normalized ligand array, said  
2     method comprising:

3                   (a) forming a ligand-modified biopolymer by attaching a ligand to a  
4     functionalized biopolymer via chemoselective ligation; and  
5                   (b) spotting an aliquot of said modified biopolymer mixture onto each of a  
6     plurality of discrete regions on a solid support to produce a concentration-normalized ligand  
7     array.

1                   15.     The method of claim 14, wherein said method further comprises, prior  
2     to step (b), the following step:

3                   (a)(i) combining said ligand-modified biopolymer with a biopolymer solution  
4     to form a modified biopolymer mixture.

1                   16.     The method of claim 14, wherein said solid support is selected from  
2     the group consisting of glass, polystyrene, PDVF membranes, nylon membranes, and  
3     polycarbonate slides.

1                   17.     The method of claim 14, wherein said aliquot is spotted onto said solid  
2     support under conditions sufficient to form a gel-coated surface.

1                   18.     The method of claim 14, wherein said biopolymer is a member  
2     selected from the group consisting of oligosaccharides, proteins, polyketides, peptoids,  
3     hydrogels, polylactates and polyurethanes.

1                    19.     The method of claim 14, wherein said ligand is selected from the group  
2 consisting of amino acids, peptides, proteins, sugars, lipids, nucleic acids, small organic  
3 compounds, pharmaceutical agents, candidate pharmaceutical agents and combinations  
4 thereof.

1                    20.     The method of claim 14, wherein said ligand-modified biopolymer is  
2 peptide-modified agarose and said solid support is glass.

1                    21.     The method of claim 14, wherein said ligand-modified biopolymer is  
2 peptide-modified human serum albumin and said solid support is polystyrene.

1                    22.     A method for promoting cell or tissue growth at a desired site, said  
2 method comprising contacting said site with a ligand-modified biopolymer in an amount  
3 effective to promote cellular chemotaxis and cell or tissue growth at said site, wherein said  
4 biopolymer component is a member selected from the group consisting of agarose, polylysine  
5 and polyacrylamide, wherein said ligand component is a chemotactic peptide specific for a  
6 cell surface receptor, and wherein said ligand component is attached to said biopolymer  
7 component via chemoselective ligation.

1                    23.     The method of claim 22, wherein said biopolymer is agarose.

1                    24.     The method of claim 22, wherein said site is a member selected from  
2 the group consisting of a stent, a graft, an organ, a tissue and an implant.

1                    25.     The method of claim 22, wherein said cell or tissue growth occurs  
2 *in vivo*.

1                    26.     The method of claim 22, wherein said cell or tissue growth occurs  
2 *in vitro*.

1                    27.     A method for assaying the binding of ligands to a binding partner, said  
2 method comprising

3                    (a) contacting a binding partner with a microarray of claim 1; and

4                    (b) determining the amount of binding that occurs between said binding  
5 partner and the ligands present in the discrete regions of said microarray.

1                    **28.**     The method of claim **27**, wherein said microarray comprises a  
2     modified agarose biopolymer.